

Earth/matriX: SCIENCE TODAY

Tables of Particle Mass Ratios and Their Reciprocals

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The CODATA listing of the recommended values of the fundamental physical constants has been developed over many decades in a theoretical manner with some empirical input. In this set of tables, a proposal is made to suggest a CODATA listing based on a more comprehensive analysis. Instead of presenting, for example, a few randomly selected mass ratios between particles, it is suggested that all possible theoretical particle mass ratios should be presented as illustrated in the following tables.

The Mass Ratios of the Recommended Values of the Fundamental Physical Constants
Table Based on CODATA presentation, 2003. Constants Presented in
Alphabetical Order as in Handbooks. All values are fractal expressions.

2003

	<i>Alpha Particle</i>	<i>Deuteron</i>	<i>Electron</i>	<i>Helion</i>	<i>Muon</i>	<i>Neutron</i>	<i>Proton</i>	<i>Tau</i>	<i>Triton</i>
<i>Alpha Particle</i>	-						3.9726		
<i>Deuteron</i>		-	3.6705				1.9990		
<i>Electron</i>	1.3709	2.7244	-		4.8363	5.4386	5.4862	2.8756	
<i>Helion</i>			5.4959	-			2.9932		
<i>Muon</i>			2.0676		-	1.1245	1.1261		
<i>Neutron</i>			1.8387		8.8924	-	1.0014	5.2876	
<i>Proton</i>					8.8802	9.9862	-	5.2801	
<i>Tau</i>			3.4775		1.6818	1.8913		-	
<i>Triton</i>			5.4969				2.9937		-

Mass Ratios
2003

There is no apparent pattern established as of the selected mass ratios. The presentation of random ratios and reciprocals consists of about 25% of total possible ratios.

The Mass Ratios of the Recommended Values of the Fundamental Physical Constants
Table Based on CODATA presentation, 2010. Constants Presented in New Order as
Given in 2012-2013 CRC Handbook. All values are fractal expressions.

2010

	<i>Planck</i>	<i>Electron</i>	<i>Muon</i>	<i>Tau</i>	<i>Proton</i>	<i>Neutron</i>	<i>Deuteron</i>	<i>Triton</i>	<i>Helion</i>	<i>Alpha p.</i>
<i>Planck</i>	-									
<i>Electron</i>		-	4.8363	2.8759	5.4461	5.4386	2.7244			1.3709
<i>Muon</i>		2.0676	-		1.1261	1.12454				
<i>Tau</i>		3.4771	1.6816	-		1.8911				
<i>Proton</i>			8.8802	5.2806	-	9.9862				
<i>Neutron</i>		1.8386	8.8924	5.2879	1.0013	-				
<i>Deuteron</i>		3.6704			1.9990		-			
<i>Triton</i>		5.4969			2.9937			-		
<i>Helion</i>		5.4958			2.9931				-	
<i>Alpha p.</i>					3.9726					-

*Mass Ratios
2010*

The New Order presented by the 2010 CODATA improve upon rendering the pattern.

Handbook of Physics and Chemistry, 2012-2013, 93rd Edition, CRC, Boca Raton.
**The CODATA recommended values of the fundamental constants of physics and chemistry
 based on the 2010 adjustment. All values are fractal expressions.**

2003

2010

	<i>Planck</i>	<i>Electron</i>	<i>Muon</i>	<i>Tau</i>	<i>Proton</i>	<i>Neutron</i>	<i>Deuteron</i>	<i>Triton</i>	<i>Helion</i>	<i>Alpha p.</i>
<i>Planck</i>	-									
<i>Electron</i>		-	4.8363	2.8759	5.4461	5.4386	2.7244	1.8192	1.8195	1.3709
<i>Muon</i>		2.0676	-	5.9465	1.1261	1.12454				
<i>Tau</i>		3.4771	1.6816	-	1.8937	1.8911				
<i>Proton</i>		1.8361	8.8802	5.2806	-	9.9862				
<i>Neutron</i>		1.8386	8.8924	5.2879	1.0013	-				
<i>Deuteron</i>		3.6704			1.9990		-			
<i>Triton</i>		5.4969			2.9937			-		
<i>Helion</i>		5.4958			2.9931				-	
<i>Alpha p.</i>		7.2943			3.9726					-

*Mass Ratios
2003*

*Mass Ratios
2010*

The CODATA New Order presentation still misplaces the Tau cells.

Earth/matrix Table: Mass Ratios and Proper Placement of Tau Cells

The incremental/decremental tendencies appear with the placement of the Tau between the Neutron and Deuteron cells as shown.

All values are fractal expressions. *This table constitutes a proposal to the CODATA.*

	Planck	Electron	Muon	Proton	Neutron	Tau	Deuteron	Triton	Helion	Alpha p.
Planck	-									
Electron		-	4.8363	5.4461	5.4386	2.8759	2.7244	1.8192	1.8195	1.3709
Muon		2.0676	-	1.1261	1.1245	4.059465				
Proton		1836.15	8.8802	-	.99862	.52806				
Neutron		1838.68	8.8924	1.0013	-	.52879				
Tau		3477.15	16.8167	1.8937	1.8911	-				
Deuteron		3.6704		1.9990			-			
Triton		5.4969		2.9937				-		
Helion		5.4958		2.9931					-	
Alpha p.		7.2943		3.9726						-

*All
Mass Ratios
2010*

The placement of Tau cells in this manner derives the incremental/decremental tendencies.

Earth/matrix Table: Planck Constants Mass Ratios

The data of mass ratios for the Planck mass constant.

All values are fractal expressions. *This table constitutes a proposal to the CODATA.*

	Planck	<i>Electron</i>	<i>Muon</i>	<i>Proton</i>	<i>Neutron</i>	Tau	<i>Deuteron</i>	<i>Triton</i>	<i>Helion</i>	<i>Alpha p.</i>
Planck	-	2389.3	11.556	1.3012	1.2994	.68714	.65095	.43466	.43474	.32755
<i>Electron</i>	4.1853	-	4.8363	5.4461	5.4386	2.8759	2.7244	1.8192	1.8195	1.3709
<i>Muon</i>	8.6539	2.0676	-	1.1261	1.12454	.059465				
<i>Proton</i>	7.6848	1836.15	8.8802	-	.99862	.52806				
<i>Neutron</i>	7.6954	1838.68	8.8924	1.0013	-	.52879				
Tau	1.4552	3477.15	16.8167	1.8937	1.8911	-				
<i>Deuteron</i>	1.5362	3.6704		1.9990			-			
<i>Triton</i>	2.3006	5.4969		2.9937				-		
<i>Helion</i>	2.3002	5.4958		2.9931					-	
<i>Alpha p.</i>	3.0528	7.2943		3.9726						-

Planck
Mass Ratios
2010

The vertical column of Planck values is expressed in fractal values without decimal placement. The downward incremental tendency would reflect the reciprocal values in the Planck horizontal row. The noticeable value relating to **mass_{defect} [2.388]** appears in the Planck-Electron mass ratio.

Earth/matriX Table: All Theoretical Mass Ratios and Reciprocals

The complete theoretical data set of possibilities for all particle masses listed in the CODATA, together with their corresponding reciprocal expressions. All values are fractal expressions. *This table constitutes a proposal to the CODATA.*

**Values
Not in the
CODATA**

	<i>Planck</i>	<i>Electron</i>	<i>Muon</i>	<i>Proton</i>	<i>Neutron</i>	<i>Tau</i>	<i>Deuteron</i>	<i>Triton</i>	<i>Helion</i>	<i>Alpha p.</i>
<i>Planck</i>	-	2389.3	11.556	1.3012	1.2994	.68714	.65095	.43466	.43474	.32755
<i>Electron</i>	4.1853	-	4.8363	5.4461	5.4386	2.8759	2.7244	1.8192	1.8195	1.3709
<i>Muon</i>	8.6539	2.0676	-	1.1261	1.12454	.059465	.05633	.03761	.03762	.02834
<i>Proton</i>	7.6848	1836.15	8.8802	-	.99862	.52806	.50024	.33403	.33409	.25172
<i>Neutron</i>	7.6954	1838.68	8.8924	1.0013	-	.52879	.50093	.33449	.33455	.25207
<i>Tau</i>	1.4552	3477.15	16.8167	1.8937	1.8911	-	.94732	.63256	.63268	.47669
<i>Deuteron</i>	1.5362	3.6704	17.7516	1.9990	1.9962	1.0556	-	.66773	.66786	.50319
<i>Triton</i>	2.3006	5.4969	26.5849	2.9937	2.9896	1.5808	1.4976	-	1.0001	.75359
<i>Helion</i>	2.3002	5.4958	26.5799	2.9931	2.9890	1.5806	1.4973	.9998	-	.75345
<i>Alpha p.</i>	3.0528	7.2943	35.2776	3.9726	3.9671	2.0978	1.9872	1.3269	1.3272	-

With the entire range of possible particle mass ratios, the random nature of the given values in the CODATA becomes quite outstanding. In my view all theoretical mass ratios must be considered, as they all exist in theory in spacetime, inasmuch as all particles are relational. Further, there appears to be no theoretical or physical criterion to include some values and to omit others.

Earth/matrix Table: All Theoretical Particle Mass Ratios and Reciprocals

All values are rounded-off fractal expressions.

This table constitutes a proposal to the CODATA.

	<i>Planck</i>	<i>Electron</i>	<i>Muon</i>	<i>Proton</i>	<i>Neutron</i>	<i>Tau</i>	<i>Deuteron</i>	<i>Triton</i>	<i>Helion</i>	<i>Alpha p.</i>
<i>Planck</i>	-	2389.3	11.556	1.3012	1.2994	.68714	.65095	.43466	.43474	.32755
<i>Electron</i>	4.1853	-	4.8363	5.4461	5.4386	2.8759	2.7244	1.8192	1.8195	1.3709
<i>Muon</i>	8.6539	2.0676	-	1.1261	1.12454	.059465	.05633	.03761	.03762	.02834
<i>Proton</i>	7.6848	1836.15	8.8802	-	.99862	.52806	.50024	.33403	.33409	.25172
<i>Neutron</i>	7.6954	1838.68	8.8924	1.0013	-	.52879	.50093	.33449	.33455	.25207
<i>Tau</i>	1.4552	3477.15	16.8167	1.8937	1.8911	-	.94732	.63256	.63268	.47669
<i>Deuteron</i>	1.5362	3.6704	17.7516	1.9990	1.9962	1.0556	-	.66773	.66786	.50319
<i>Triton</i>	2.3006	5.4969	26.5849	2.9937	2.9896	1.5808	1.4976	-	1.0001	.75359
<i>Helion</i>	2.3002	5.4958	26.5799	2.9931	2.9890	1.5806	1.4973	.9998	-	.75345
<i>Alpha p.</i>	3.0528	7.2943	35.2776	3.9726	3.9671	2.0978	1.9872	1.3269	1.3272	-

A final table would require listing the non-fractal, full values in scientific notation.

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